3.—*Analysis of the crop: method of valuation employed.*

77. No valuation was attempted as this was unnecessary in view both of the method of treatment to be adopted and the present abnormal condition of the forests. Appendix D gives a good idea of the composition and condition of the crops in each working circle from which a fairly accurate estimate of their contents and value may be judged.

78. It has been seen the average price per acre (Rs. 4·70) realised on the coupes sold under contract working during the last 8 years furnished an average out-turn of not quite 400 cubic ft. per acre calculated on the royalty due to the department. This represents anything but a normal condition of the crops, and is the result of repeated cutting in the past. Lack of water in the dry forests to assist regeneration is a further disabling cause of the low yield which has marked the working of the forests during the last several years.

CHAPTER VII.

Method of treatment.

1.—*Object to be attained.*

79. The facts recorded in the preceding paragraphs go to show that the object with which the forests should be worked is to provide fuel for the railway and for local use, and pasture for cattle; and that these products should be grown on suitable areas of land which receive the benefit of the yearly floods. Lands that cease to be reproductive should be abandoned, and additional areas ought to be acquired in their place on the banks of the ri[redacted] By this means only will an adequate supply of the requisite products be k up, and a maximum of results ensured for a minimum of area. Babul a *tali* timber ought to be encouraged; the former by protection from browse and fire, and the latter by sowing and planting in riverside forests where th soil is adapted to its growth.

2.—*Method of treatment adopted.*

80. This coincides with what has been proposed for the forests of the other divisions, the circumstances being precisely similar. The method of clean-felling with natural and artificial regeneration best suits the condition of the forests and the description of the produce they are required to yield. *Bahan* and *lai* reproduce well by seed in the low-lying parts, and by coppice shoots and root-suckers where the soil is subject to ordinary floods; *kandi*, too, thrives well in similar circumstances, but retains its vitality and power of reproduction by coppice shoots from the parent stools long after the other species have died out; and babul is raised from seed practically self-sown in the *kachas* and moist forest tracts. Nearly in all cases reproduction will be natural, artificial aid being given only in *kandi* areas which have ceased to come under the direct influence of the river, and where babul, *bahan* and *lai* have no part in the regeneration.

81. It is not necessary that the fellings should take place on adjacent areas. The crops are usually uneven, and will be always more or less so on account of the changes of the river, so that a more equal annual yield will be possible by distributing the fellings in a working circle in the order in which the growth shows most advance, than in any close-fitting sequence of fellings which has no regard for what may, or may not be, on the ground. This requires that the Divisional Forest Officer should decide, after inspection one season before, in what part of the working circle that season's felling ought to be. Nor need the coupes in a working circle be annual and equal: a coupe may be allotted two years, and there may be no coupe in the third year, or as may be necessary, so long as the blank years are different in different forests. In this way the allotment of coupes will not be the mechanical process it usually is, and it will be easy to work out the mature growth in threatened spots liable to erosion.

3.—*Exploitable age.*

82. This has been determined in the case of the Naushahro division to be 30 years, and the same conditions apply here. A revolution of 30 years, which is what the exploitable age here means, is very appropriate for the dry forests in which regeneration is slow, but is hardly applicable to riverside forests in which the growth has every chance of doing well. Under regular yearly floods *kandi*, *bahan* and *lai* yield exploitable material in 15 years. In the year 1901-02 diameter measurements were taken of 2,073 coppice stems of *kandi* standing in coupes of both riverside and dry forests, and the following figures were obtained, showing the average growth in inches in the two instances :—

Year of felling.	Riverain forest.	Dry forests.
1895-1896 ...	... 5·17	3·51
1896-1897 ...	... 4·25	2·89
1897-1898 ...	... 3·65	2·43
1898-1899 ...	... 2·48	1·72
1899-1900 ...	... 1·77	1·20

It is true that the river changes repeatedly and that the rate of growth is affected by these changes, but even allowing for resulting retardation a period of 20 years for the revolution of fellings in riverside forests ought to be ample. The largest size of firewood to be grown is only 30″ in circumference, or less than 10″ in diameter, and there can be no advantage in allowing the produce to grow beyond the size at which it is marketable.

CHAPTER VIII.

The fellings.

83 The fellings are prescribed for a period of 10 years beginning from the year 1901-1902. Those for the first 2 years have been completed, and the areas felled over are closed for re-production. The fellings prescribed for 1903-1904 are marked off on the ground and will be likewise completed in due course. Those for the remaining 7 years are detailed in appendix C and are shown on the maps.

84. It was deemed advisable to prescribe fellings for only 10 years in the beginning, so that if any modifications were required to be made of either the revolution or the allotment of fellings, it could be easily done after that time and for a further period of 10 years or as may be necessary. Besides, in the peculiar circumstance of the Sind forests of the areas changing always, it is well not to look a head farther than a period of 10 years, if, indeed, that is not too long; perhaps half that number of years would be a safer limit wherein to anticipate working. The present prescription, too, is open to modification, if necessary, as regards the allotment of the fellings so long as the prescribed areas are not exceeded.

CHAPTER IX.

Sowings or plantings.

85. The only special work of sowing that will be required to be done has reference to blanks in *kandi* areas which will be sowed with the aid of cereal crops. Of course, there will be a limit to even this depending on the quality of the soil and the proximity of water for irrigation, but advantage should always be taken of this cheap and sufficient method of re-stocking denuded areas due to fire or lack of water. Encouragement should be given to deserving cultivators by remitting the assessment due on the cultivation in whole or in part as may be necessary.

86. Planting will be restricted to *tali* (*dalbergia*) and suitable areas on the banks of the river should be chosen on which to rear this valuable species. It requires tending and watering for the fist two or three years until it becomes